Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-30. (Canceled)

31. (Withdrawn) A method for selectively reducing the carbon-carbon double bond of an α,β-unsaturated ketone, comprising the step of reacting an α,β-unsaturated ketone with the enone reductase of claim 1.

32. (Withdrawn) A method for selectively reducing the carbon-carbon double bond of an α,β-unsaturated ketone, comprising the step of reacting an α,β-unsaturated ketone with the polypeptide of claim 16.

33. (Withdrawn) A method for selectively reducing the carbon-carbon double bond of an α,β-unsaturated ketone, comprising the step of reacting an α,β-unsaturated ketone with the polypeptide of claim 17.

34. (Withdrawn) A method for selectively reducing the carbon-carbon double bond of an α,β-unsaturated ketone, comprising the step of reacting an α,β-unsaturated ketone with the polypeptide of claim 23.

35. (Withdrawn) A method for selectively reducing the carbon-carbon double bond of an α,β-unsaturated ketone, comprising the step of reacting an α,β-unsaturated ketone with a microorganism that produces an enone reductase having the physicochemical properties of (A)-(C):

(A) it reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon;

(B) it has a substrate specificity of (1)-(4):

(1) it has substantially no activity to reduce the keto group of a ketone;

(2) it exhibits a significantly higher activity with NADPH than with NADH as an electron donor;

(3) it does not substantially act on substrates wherein both substituents at the β carbon relative to the ketone are not hydrogen; and

(4) it does not substantially act on a substrate in which the carbon-carbon double bond is present in a cyclic structure; and

(C) it has an optimal pH of 6.5-7.0.

36. (Withdrawn) The method of claim 35, wherein the microorganism is of the genus *Kluyveromyces*.

37. (Withdrawn) The method of claim 35, wherein the microorganism is the transformant of claim 12.

38. (Withdrawn) The method of claim 35, wherein the microorganism is the transformant of claim 26.

39. (Withdrawn) A method for selectively reducing the carbon-carbon double bond of an α,β-unsaturated ketone, comprising the step of reacting an α,β-unsaturated ketone with a processed product of a microorganism that produces an enone reductase having the physicochemical properties of (A)-(C):

(A) it reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon;

(B) it has a substrate specificity of (1)-(4):

(1) it has substantially no activity to reduce the keto group of a ketone;

(2) it exhibits a significantly higher activity with NADPH than with NADH as an electron donor;

(3) it does not substantially act on substrates wherein both substituents at the β carbon relative to the ketone are not hydrogen; and

(4) it does not substantially act on a substrate in which the carbon-carbon double bond is present in a cyclic structure; and

(C) it has an optimal pH of 6.5-7.0.

40. (Withdrawn) The method of claim 38, wherein the microorganism is of the genus *Kluyveromyces*.

41. (Withdrawn) The method of claim 38, wherein the microorganism is the transformant of claim 12.

42. (Withdrawn) The method of claim 38, wherein the microorganism is the transformant of claim 26.

43. (New) An isolated polypeptide comprising a sequence at least 80% percent identical to SEQ ID NO: 2, wherein the polypeptide is an enone reductase that reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon.

44. (New) The polypeptide of claim 43, wherein the sequence is at least 85% identical to the amino acid sequence of SEQ ID NO:2.

45. (New) The polypeptide of claim 43, wherein the sequence is at least 90% identical to the amino acid sequence of SEQ ID NO:2.

46. (New) The polypeptide of claim 43, wherein the sequence is at least 95% identical to the amino acid sequence of SEQ ID NO:2.

47. (New) An isolated polypeptide encoded by a nucleic acid consisting of the complement of a nucleic acid that hybridizes under stringent conditions to a nucleic acid consisting of the nucleotide sequence of SEQ ID NO:1, wherein said stringent conditions include hybridization in 6x SSC at about 45°C, followed by one or more washes in 0.2x SSC, 0.1% SDS at 65°C, wherein the polypeptide is an enone reductase that reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon.

48. (New) An isolated polypeptide encoded by a nucleic acid consisting of a nucleotide sequence that is at least 80% identical to SEQ ID NO:1, wherein the polypeptide is an enone reductase that reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon.

49. (New) The isolated polypeptide of claim 48, wherein the nucleic acid consists of a nucleotide sequence that is at least 90% identical to SEQ ID NO:1.

50. (New) The isolated polypeptide of claim 48, wherein the nucleic acid consists of a nucleotide sequence that is at least 95% identical to SEQ ID NO:1.

51. (New) An isolated polypeptide, wherein the polypeptide is an enone reductase that:

(a) reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon;

(b) has an optimal pH of 6.5-7.0;

(c) has a molecular weight determined by sodium dodecyl sulfate-polyacrylamide gel electrophoresis and by gel filtration of about 43,000 Da and about 42,000 Da, respectively;

(d) has an optimal temperature within the range of 37-45°C; and

(e) has a substrate specificity of (1)-(4):

(1) substantially no activity to reduce the keto group of a ketone;

(2) exhibits a significantly higher activity with NADPH than with NADH as an electron donor;

(3) does not substantially act on a substrate in which neither substituent at the β carbon relative to the ketone is hydrogen; and

(4) does not substantially act on a substrate in which the carbon-carbon double bond is present in a cyclic structure.

52. (New) The isolated polypeptide of claims 51, wherein the polypeptide has the sequence of a *Kluyveromyces* enone reductase.

53. (New) The isolated polypeptide of claim 51, wherein the polypeptide has the sequence of a *Kluyveromyces lactis* enone reductase.

54. (New) An isolated polypeptide the amino acid sequence of which consists of SEQ ID NO:2.

55. (New) An isolated polypeptide the amino acid sequence of which comprises SEQ ID NO:2.

56. (New) An isolated polypeptide the amino acid sequence of which comprises SEQ ID NO:2 with 0 to 50 conservative amino acid substitutions, wherein the polypeptide is an enone reductase that reduces the carbon-carbon double bond of an α,β-unsaturated ketone, using NADPH as an electron donor, to produce a corresponding saturated hydrocarbon.

57. (New) The isolated polypeptide of claim 56, wherein the number of conservative amino acid substitutions is 0 to 30.

58. (New) The isolated polypeptide of claim 56, wherein the number of conservative amino acid substitutions is 0 to 10.